

FRANKOWSKI, Aleksander

Principles for the construction of plaster casts and orthopedic  
braces in scoliosis. Chir.narz.ruchu 24 no.3:237-240 '59.

1. Z Miejskiej Przychodni Specjalistycznej dla Dzieci w Krakowie.

Kierownik: dr K. Capinska.

(SCOLIOSIS ther.)  
(CASTS SURGICAL)  
(BRACES)

FRANKOWSKI, Aleksander; CZARNY, Halina; ZIENKIEWICZ, Tadeusz

Conservative therapy of flexion contractures of lower extremities  
in primary chronic rheumatism. Chir. narzad. ruchu ortop. Pol.  
28 no.7:717-718 '63

1. Z Instytutu Reumatologicznego w Warszawie. (Dyrektor: dr.med.  
W. Brühl), Oddział w Krakowie (Kierownik: prof. dr. A. Sokolowski).

L 37003-00

ACC NR: AP6006630

(A, N)

SOURCE CODE: PO/0094/65/000/046/0004/0005

AUTHOR: Frankowski, Edward (Lieutenant Colonel)

64  
B

ORG: none

TITLE: "October storm" [mock combat]

SOURCE: Zolnierz polski, no. 46, 1965, 4-5

TOPIC TAGS: military personnel, military training, field exercise, attack bombing, cargo parachute, tactical missile, military tank, nuclear weapon

ABSTRACT: A mock combat was staged by Soviet, Polish, Czech, and East German troops with weapons, including dummy nuclear weapons, in Thuringian in October. The Kraus unit of the East German Democratic Republic, the Polish Sixth Pomeranian Airborne Division under the command of General Edwin Rozlubirski and his Political Officer Lieutenant Colonel Jozef Gastol, including a recoilless gun detachment under the command of Ryssard Rutkowski, and Soviet artillery one battery of which was under the command of Captain Koz'lenikov, participated in the combat. Walter Ulbricht, Marshal of the Soviet Union Andrey Grechko occupied the reviewing stand. Observers from noncommunist countries were also present. "Star 66" cars, manufactured in

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L 37063-66

ACC NR: AP6006630

Poland, T-55 tanks, and surface-to-surface missiles were included in the parade that followed the mock battle. Some of the weapons photographed by Zbigniew Chmurzynski are included in this article. Orig. art. has: 4 figures.

SUB CODE: 15057 SUBM DATE: none

*ms*  
Card 2/2

J. Frankowski, J.  
FRANKOWSKI, J.; CHABLOWSKI, J.

"Methods for Testing Video Amplifiers", p. 49, (PRZEGLAD TELEKOMUNIKACYJNY,  
Vol. 28, No. 2, Feb. 1955, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol 4, No. 5,  
May 1955, Uncl.

FRANKOWSKI, M.

Buildings for the breeding and fattening of swine in Hungary. p. 21.  
(Budownictwo Wiejskie, Vol. 8, no. 1, Jan. 1956, Warszawa)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957 Unclassified

STASIEWICZ, Irena; HAJDUKIEWICZ, Leszek; FRANKOWSKA, Małgorzata; CZARTORYSKI,  
Pawel

Scientific sessions of the Section for the History of Social  
Sciences of the Institute of History of Science and Technology.  
Kwart hist nauki i tech 7 no.3:407-413 '62.

5  
1-12mL

Distr: 4E3d

3306

BASIC PROBLEMS IN NUCLEAR POWER PRODUCTION.

19

Wojciech Frankowski, Nuklearika, 2, No. 2, 225-65 (1987)

(In Polish)

A survey is given of the economic aspects of nuclear power production. The selection of items: the coefficient of transformation, the fuel cycles, the performance curves of  $U^{235}$ ,  $U^{233}$ , and various types of reactors are analyzed. Estimates were made of the production and utilization of fissionable materials, the value of Pu from early reactors and costs of nuclear fuels. (R. V. J.)

THF

NOWACKI, Pawel Jan; FRANKOWSKI, Waclaw

Outlook for use of nuclear energy in Poland. Jaderna energie 3 no.12:  
414-416 D '57

1. Vysoka skola technicka, Varsava (for Nowacki).
2. Ustav pro jaderny vyzkum (for Frankowski).

POLAND/Nuclear Physics - Nuclear Power and Technology

C

Abs Jour : Ref Zhur Fizika, No 8, 1959, 17523

Author : Frankowski, W., Wagner, J., Wojcik, T.

Inst :

Title : Conditions of the Economic Operation of Nuclear Power  
Stations in Poland

Orig Pub : Nucleonika, 1958, 3, Spec. Number, 11-17

Abstract : No abstract.

Card 1/1

82707

P/046/60/005/001-2/001/008  
A222/A026

21.1800

AUTHOR: Frankowski, Wacław

TITLE: Concept of an Industrial Installation for Non-Destructive  
Analysis of Irradiated Fuel Elements/9

PERIODICAL: Nukleonika, 1960, No. 1-2, pp. 23-26.

TEXT: The author presents a new concept of a facility for determining the burn-up of power reactor fuel slugs by means of a critical assembly. The facility suggested permits measuring the burn-up without any damage to fuel slug jackets, it does not alter nuclear and mechanical properties of the slugs, and makes possible high burn-up by using a "shuffling" process. The author reasons that the same reactivity can be obtained from different isotopic compositions of fuel (Fig. 1) and that direct measurement of fuel reactivity therefore seems to be more feasible than accurate determination of the isotope composition of the fuel. The zero power reactor serving such direct measurement (Fig. 2) is provided with a slug channel (Fig. 2, C) in the center of the reactor core, designed to receive the tested fuel slug. The position of control rods

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82707

P/046/60/005/001-2/001/008  
A222/A026

Concept of an Industrial Installation for Non-Destructive Analysis of  
Irradiated Fuel Elements

(Fig. 2, B) at critical condition may serve, after proper calibration, as a reactivity indicator for the tested fuel slugs. The introduction of fuel slugs subject to tests and the control of critical condition must be automated. The reactor core may be built from a homogeneous compound of graphite and slightly enriched uranium. The operation of the burn-up measurement system in a shuffling installation is shown in Fig. 3. Fuel slugs from the power reactor will be shifted by a charging machine (Fig. 3, A) to a position above the slug passage (Fig. 3, B) and individually lowered into a preset position in the zero power reactor (Fig. 3, C). The measurement may be recorded on and controlled from a desk (Fig. 3, E). There are 3 figures. (Abstracter's Note: After submission of this report, the author received information that a similar installation has been designed by the US Westinghouse Electric Corporation). 4

ASSOCIATION: Polish Academy of Sciences, Institute of Nuclear Research

SUBMITTED: October 4, 1959

Card 2/2

20076

POL/046/61/006/003/003/005  
D209/D303

21.1910  
AUTHORS: Frankowski, Wacław, Kmietek, Edmund, Mika, Janusz,  
Strupczewski, Andrzej, and Zmysłowski, Arkadiusz

TITLE: Determining the geometry of technological channels  
for the second Polish research reactor

PERIODICAL: Nukleonika, v. 6, no. 3, 1961, 181-196

TEXT: This paper describes the calculations leading to the design of the fuel element for the second Polish research reactor. The geometry of the channels was based on the RFT reactor, in which concentric annular fuel elements are contained between inner and outer tubes directing the flow of coolant. The composition of the elements - Al + UO<sub>2</sub>, with 20 % U<sup>235</sup> enrichment, and clad in aluminum - was the same as in the Soviet VVR-M reactor. Maximum reactivity of the active zone was sought for a central thermal

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POL/046/61/006/003/003/005  
D209/D303

Determining the geometry of ...

neutron flux of  $10^{14}$  per  $\text{cm}^2\text{-sec}$ . Physical calculations were performed first to determine the nuclear parameters of the assembly for different proportions of the constituents. The basic data were: Element length = 102 cm; Vol. of air and helium in channel = 650  $\text{cm}^3$ ; Lattice pitch = 14 cm; Channel radius = 3.75 cm; Composition of element = 0.253 gm.  $\text{U}^{235}$ , and 1.026 gm.  $\text{U}^{238}$  0.173 gm.

Oxygen, and 2.308 gm. Al per  $\text{cm}^3$ . The total  $\text{U}^{235}$  content of a channel was varied between 60 and 252 gms., with corresponding variation in the quantities of other constituents. Due to the thinness of the elements, and the large moderator volume, the channel was taken as a homogeneous mixture of uranium, aluminum, water, air and helium, and fast fission effects were neglected. A.D. Galanin (Ref. 1: Teoriya yadernykh reaktorov na teplovyykh neytronakh (Theory of Thermal Nuclear Reactors) Moscow, 1959, Atomizdat) is mentioned as the source for calculating slowing-down lengths. The parameters are determined from the standard equation

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POL/046/61/006/003/003/005  
D209/D303

Determining the geometry of ...

$$k_{\text{eff}} = \frac{k e^{-\mu_r^2 \gamma}}{1 + \mu_r^2 L^2} \quad (2.5)$$

where  $k_{\text{eff}}$  and  $k$  are the effective and infinite multiplication constants,  $\mu_r$  the geometrical buckling,  $\gamma$  the neutron age, and  $L^2$  the thermal neutron diffusion area. Calculations were made for an unreflected reactor radius of 80 cms., corresponding approximately to a 35 element reactor with a graphite reflector. Thermal and hydraulic calculations were next performed for channels containing 3.5 and 6 annular elements, disposed between two pipes with inner diameters of 72 and 14 mms. and outer diameters of 75 and 16 mms. respectively. The thickness of the aluminum shell was 0.65 mm. Uniform heat transfer along the element was assumed, and a limiting maximum wall temperature of 150°C was used, based on the RFT reactor. The heat transfer coefficient was calculated from

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D209/D303

Determining the geometry of ...

$$a = C(A + Bt_f)(w\gamma)^{0.8} \quad (3.2.1)$$

where  $a$  is the coefficient in  $\text{kcal./m}^2 \cdot \text{hr.}^{\circ}\text{C.}$ ,  $C = \left(\frac{1}{d_c}\right)^{0.2}$ ,  $d_c$  is

the hydraulic diameter in m.,  $t_f$  is the mean water temperature in  $^{\circ}\text{C}$ ,  $w$  is the water velocity in m./sec. and  $\gamma$  is the density of water in  $\text{kg/m}^3$ .  $A = 1.53$  and  $B = 0.065$  according to Petrov, p.129. Abstractor's note: No reference given to the title of Petrov's work. Other calculations are made for the temperature rise and pressure drop of water in passing through the channel, and for the maximum wall temperature. The results indicate that a) Increasing the number of element rings in a channel is not profitable, since the amount of aluminum per unit mass of fuel increases and decreases the quantity of water; b) An increase in  $\text{U}^{235}$  above about 250 gms., corresponding to 1.25 MW power, is not worthwhile, since the increase rate of reactivity has dropped; c) The best fuel element disposition is the 3-ring element containing 200-250 gms.

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20076

Determining the geometry of ...

POL/046/61/006/003/003/005  
D209/D303

$U^{235}$ , for which the reactor power will be 1.25 MW. There are 8 figures, 11 tables and 1 Soviet-bloc reference.

ASSOCIATION: Institute of Nuclear Research PAS, Warsaw. Department of Reactor Technology.

SUBMITTED: December, 1960

X

Card 5/5

P/046/62/007/002/003/003  
D256/D302

AUTHOR: Frankowski, Włodzimierz

TITLE: Comments on the importance of hazard evaluation in  
the siting of a high flux experimental reactor

PERIODICAL: Nukleonika, v. 7, no. 2, 1962, 89 - 92

TEXT: The evaluation of hazards is discussed in general terms in connection with siting the proposed 2nd Polish experimental reactor designed for a flux of thermal neutrons of  $10^{14}$  neutrons/cm $^2$  and 30 MW thermal power. An approach consisting of two steps in siting a reactor is considered; 1) "General siting", i.e. selection of the most suitable area; 2) "Exact siting". The arguments are presented that led to siting the proposed reactor at the existing center of nuclear research at Świerk near Warsaw. The paper was presented at the IAEA Panel on Siting of Reactors, Vienna, 31 October, 3 November, 1961. There are 2 non-Soviet-bloc references. The references to the English-language publications read as follows: H.J. Gomberg, A quantitative approach to evaluation of risk in lo-

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Comments on the importance of ...

P/046/62/007/002/003/003

D256/D302

cating a reactor on a given site, 2nd U.N.I.C.P.U.A.E., Genova;  
M.B. Biles, and C.K. Beck, Some Safety Matters Related to Small  
Nuclear Power Plants, I.A.E.A. Conf on Small and Medium Power Reac-  
tors.

ASSOCIATION: Instytut badań jądrowych, Warszawa (Institute of Nu-  
clear Research, Warsaw)

SUBMITTED: November, 1961

Card 2/2

FRANKOWSKI, W.

From the conference of the expert team concerning the citing of  
reactors Vienna (Austria) October 31, - November 3, 1961. Nukleonika  
7 no.2:129-130 '62.

FRANKOWSKI, Waclaw

Hazards evaluation for the new reactors sited at the Nuclear  
Research Center "Swierk". Nukleonika 7 no.10:599-610 '62.

1. Institute of Nuclear Research, Polish Academy of Sciences,  
Warsaw.

PONKIEWSKI, Z.

"Selected projects in a contest for the safety of cutters working at cutting machines." p. 61. (ODZIEZ, Vol. 4, no. 3, Mar. 1953, Lodz, Poland)

SO: Monthly List of East European Accessions, L. C., Vol. 3, No. 5, May 1954, Uncl.

FRANKOWSKI, Z.

"Achievements in the clothing industry and its future tasks in developing industrial inventiveness." p. 216. (ODZIEZ. Vol. 5, No. 11, Nov. 1954. Lodz, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4. April 1955. Uncl.

FRANKOWSKI, Z. : WAKSMAN, C.

Developmental trends of production technique and management in the clothing industry.  
II. Technological progress. p. 258.  
Vol 6, no. 12, Dec. 1955. ODZIEZ. Lodz, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

FRANKOWSKI, Z.

FRANKOWSKI, Z. The more important rationalization projects in the clothing industry; the flat basting machine based on the construction on the Singer KI 31 stitching machine. p. 318. Vol. 7, no. 12, Dec. 1956. (DZIEŁ.  
Lodz, Poland.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

FRANKS, Russel, KINTSEL, A N

VYSOKOKHROMISTYE NERZHAYEVYUSCHIE I ZHAROUPORNYE STALI (High-Chromium Stainless & Heat-Resisting Steels), 1945

FRANKSHTEYN, M. I.

"Clinicoanatomical Data on the Pathogenetic Classification of Pneumosclerosis,"  
Terap. Arkhiv., No.4, 1949

Faculty Therapeutics, 2nd Moscow Med. Inst. im. Stalin

PA 53T62

FRANKSHTEYN, S. I., PROF

USSR/Medicine - Nervous System  
Medicine - Pathology

Nov/Dec 1947

"Neural Regulation of the Pathological Changes in Organs," Prof S. I. Frankshteyn, Inst Genl and Experimental Pathol, Acad Med Sci USSR, 5½ pp

"Arkhiv Patolog" No 6

Part two of a series. Records studies on the motor reactions on injuries to extremities, during severing of trunk in region of "chetverokholm" (shoulders). Particular attention paid to character of motor reactions when central nervous system was severed at other levels. Submitted, 20 Dec 1947.

53T62

LC

FRANKSHTEYN, S. I.

PA 35/49T57

USSR/Medicine - Catalepsy  
Medicine - Spinal Cord

Sep 48

"The Role of Dominant Excitation Centers in the  
Development of Localized Catalepsy," S. I. Frank-  
shteyn, D. P. Pletschits, Inst Gen and Experimental  
Path, Acad Med Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXII, No 1

Concludes that: (1) Form in which localized cata-  
lepsy is manifested is determined by dominant ex-  
citation of one or another spinal center. (2) During  
artificial changes of the dominant excitation of  
spinal centers (irritation from the periphery), dis-  
tortion of standard form of localized catalepsy is  
35/49T57

USSR/Medicine - Catalepsy (Contd)

Sep 48

observed. Submitted by Acad A. D. Speranskiy,  
30 Jun 48.

35/49T57

FRANKHTEYN, S. I.

USSR/Medicine - Tetanus, Experimental Medicine - Frogs Mar 49

"The Dominant Mechanism in the Development of Tetanus," D. F. Pletschy, S. I. Frankhteyn, Inst Gen and Experimental Path, Acad Med Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXV, No 3

PA 39/49T77

Experiments confirm physiological regularities in tetanus development discovered when the dominant focus of irritation was created in the spinal column of animals. Proves that tetanus as a nerve process is subjected to regularities of dominant irritation in its development by experiments on rabbits and frogs. Tetanus has same manifestations in man as in male frogs, i.e., straightening of lower extremiti-ies and bending of upper extremities.

Bending position of the arms during tetanus may be explained by the dominant irritation of the bending muscle centers, developing in relation to man's working activity. A similar distribution of muscle tone (straightening of legs and bending of arms) also develops in man during other nerve diseases, e.g., in central spastic paralyses. Submitted by Acad A. D. Speranskiy, 27 Jan 49.

39/49T77

EXPERIMENTAL PATHOLOGY

1955. The Reflected State of Irritation of the Nervous System caused by Injury to the Respiratory Organs. (Ограженное раздражение нервной системы при повреждении органов дыхания)

S. J. FRANKSTEIN and T. I. GORJUNOVA. *Архив Патологии* [Arkh. Patol.] 12, No. 1, 40-44, 1950. 9 refs.

The lungs of rabbits and dogs were injured by injection of small quantities of hot water through the chest wall. The response of the respiratory centre to such injury was

observed by its reaction to the irritation of the sciatic and proximal segments of the vagus nerves before and after vagotomy. It was shown that a state of reflected irritation of the respiratory centre existed, as revealed by its failure to react normally to peripheral stimuli, the threshold to such stimuli being raised. These abnormal responses were abolished when afferent stimuli reaching the respiratory centre from the injured lung were interrupted by vagotomy.

L. Crone

Abstracts of World Medicine  
Vol 8 1950

FRANKSTEIN, S. I.

FRANKSTEIN S. I.

Otrazhennoe randerazhenie nervnoi sistemy v rasstroistvakh diureza.  
/Reflex stimulation of the nervous system in diuretic disorders./  
Arkh. pat., Moscow 12:4 July-Aug 50 p. 31-6.

1. Of the Laboratory of Comparative Pathology (Head -- Prof. S. I. Frankshteyn), Institute of General and Experimental Pathology (Director -- Academician A. D. Speranskiy) of the Academy of Medical Sciences USSR.

CLML 19, 5, Nov 50

FRANKSTEYN, S. I.

Origin of reflex and distortion of central contractures in  
experiments on decerebrated animals. Nevropat. psichiat.,  
Moskva 19 no.4:51-54 July-Aug. 1950 (CIML 20:1)

I. Of the Institute of General and Experimental Pathology  
(Director -- Academician A. D. Speranskiy) of the Academy of  
Medical Sciences USSR).

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000413610010-5

FRANKS IRVIN, S. 1

Refleksy Patologicheskii Izmenennykh Organov (Reflexes- Pathological Modifications in the Organism), 145 p., Medgiz, Moscow, 1951.

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000413610010-5"

FRANKSHTEYN, S. I.

"The Role of the Higher Branches of the Central Nervous System in Compensating  
for Disturbed Function of the Organism,"  
p. 165.

Problema Reaktivnosti v Patologii, Medgiz, Moscow 1954. 344pp.

FRANKSHTEYN, Samuil Isayevich. Prinimali.uchastiya: GORYUNOVA, T.I.;  
GAYDINA, G.A.

[Demonstration course in pathological physiology] Demonstratsion-  
nyi kurs patologicheskoi fiziologii. Moskva, Medgiz, 1956. 290 p.  
(PHYSIOLOGY, PATHOLOGICAL) (MIRA 13:8)

*FRANKSHTEYN, S.L.*  
FRANKSHTEYN, S.L., prof. (Moskva)

Rules governing disorders and restoration of functions in the process of evolution [with summary in English]. Pat.fiziol. i eksp. terap. 1 no.5:36-40 S-0 '57.  
(MIRA 10:12)

1. Iz laboratoriis srovnitel'noy patologii nervnoy sistemy (zav. - prof. S.I.Frankshteyn) Instituta normal'noy i patologicheskoy fiziologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR V.N. Chernigovskiy)

(WOUNDS AND INJURIES, experimental, responses & restoration of funct. after trauma of various organs in animals in various levels of evolution (Eng))  
(EVOLUTION,  
same)

FRANKSHTEYN, S.I.

USSR/Human and Animal Physiology - The Nervous System.

7-2

Abs Jour : Ref Zbir. - Biol., No 4, 1953. 18519

Author : S.I. Frankshteyn, V.A. Antonjushenko, V.Yu. Girslevich  
and N.K. Kapustina

Inst :

Title : The Significance of Pathological Dominance in a Clinic of  
Central Paralysis (The Mechanisms of Increase in Muscle  
Tonus, Pathological Reflexes, Myokinesis and the Restora-  
tion of Motor Function).

Orig Pub : Vestn. Akad. med. nauk SSSR, 1957. No 1, 17-29

Abstract : On the basis of experimental data and clinical observa-  
tions the authors arrive at the conclusion that at the  
root of the increase in muscle tones in decerebrate rig-  
idity and hemiplegia lies the emergence of dominant ex-  
citation foci in the central nervous system--in the first  
case as a result of disinhibition of the centers of anti-  
gravitational muscles, which are even normally in a state

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Inst Normal & Pathol. Physiol AMN USSR;  
Clinic of Nervous Diseases, Inst Inst Ado. Eng.  
Physician

USSR/Human and Animal Physiology - The Nervous System.

V-3

Abs Jour : Ref Zhur - Biol., No 4, 1958, 18519

of heightened excitability, and in the second case as a result of a gradual accumulation of impulses from muscle, the points of attachment of which have been drawn closer together from the paralysis. The same mechanism is at the basis of the appearance of Babinsky's and Rossolimo's reflexes following insult, and of synkinesis as well. With the restoration of motor function it is necessary to prevent the formation in the central nervous system of pathological dominance by ensuring the correct position of the extremities, proceeding in good time with a maximal amount of passive movement in all joints, and correctly educating the integrated active movements of the patients. The authors recommend beginning work toward avoiding contracture in the very first days after insult, when the extremities are still flaccid.

Card 2/2

FRANKSHTEYN, S.I., prof.

Reaction of the nervous system to the irritation of a focus of  
injury. Vest. AMN SSSR 14 no. 7:36-41 '59. (MIRA 12:9)

1. Laboratoriya sravnitel'noy patologii nervnoy sistemy Insti-  
tuta normal'noy i patologicheskoy fiziologii AMN SSSR.  
(WOUNDS AND INJURIES experimental)  
(NERVOUS SYSTEM physiology)

FRANKSHTEYN, S.I., prof.

Current status of the problem of neural mechanisms in fixation contractures. *Khirurgiia* 36 no.11:59-64 N '60.

(MIRA 13:12)

1. Iz Instituta normal'noy i patologicheskoy fiziologi (dir. - deyastvitel'nyy chlen AMN SSSR prof. V.N. Chernigovskiy) AMN SSSR.

(CONTRACTURE)

SERGEYEVA, Z.N.; GORYUNOVA, T.I.; FRANKSHTEYN, S.I.

Afferent pulsation in single fibers of the vagus nerve in lung injury. Biul. eksp. biol. i med. 51 no.6:29-33 Je '61.  
(MIRA 15:6)

1. Iz laboratorii eksperimental'noy patologii nervnoy sistemy (zav. - prof. S.I. Frankshteyn) Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR V.V. Parin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.V. Parinym.

(VAGUS NERVE) (LUNGS—DISEASES)

FRANKSHTEYN, S.I.; GAYDINA, G.A.; GORYUNOVA, T.I.; SERGEYEVA, Z.N.;  
SMOLIN, L.N.

Mechanism of dyspnea in lung injury in the light of electro-  
physiological studies. Trudy Inst. norm. i pat. fiziol. AMN  
SSSR. 6:102-104 '62 (MIRA 17:1)

1. Laboratoriya eksperimental'noy patologii nervnoy sistemy  
(zav. - prof. S.I.Frankshteyn) Instituta normal'noy i pato-  
logicheskoy fiziologii AMN SSSR.

FRANKSTEIN, S.I., prof.

Laboratory manual on pathological physiology. Pat. fiziol. i  
eksp. terap. 6 no. 3-94. Mg-Jel'62  
(MIRA 17-2)

SERGEYEVA, Z.N.; GORYUNOVA, T.I.; FRANKSHTEYN, S.I.

Excitation mechanism of the respiratory center in lung lesions.  
Biul.eksp.biol.i med. 54 no.11:30-33 N '62. (MIRA 15:12)

1. Iz laboratorii srovnitel'noy patologii nervnoy sistemy (zav. -  
prof. S.I.Frankshteyn) Instituta normal'noy i patologicheskoy  
fiziologii (dir. - Deystvitel'nyy chlen AMN SSSR V.V.Parin).  
Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.  
(LUNGS—DISEASES)(RESPIRATION)

FRANKSHTEYN, S.I.

Electrophysiological analysis of reactions of the nervous system  
to the irritation from pathologically modified tissues. Trudy.  
Inst. norm. i pat. fiziol. AMN SSSR 7:102-104 '64.

(MIRA 18:6)

1. Laboratoriya eksperimental'noy patologii nervnoy sistemy (zav. -  
prof. S.I. Franksteyn) Instituta normal'noy i patologicheskoy  
fiziologii AMN SSSR.

SERGEYEVA, Z.N.; JIN CHI-CHUAN [Yin sh'ih-chuan]; FRIEDMAN, L.

Afferent impulses from an inflammatory focus. Biol. eksperim. biofiz. i med. 59 no.2:37-40 F '65. (USSR 1971)

l. Laboratoriym eksperimental'noy patologii nervnoy sistemy  
(zav. - prof. S.I. Frakhtayn) Instituta normal'noy i pato-  
logicheskoy fiziologii (dir. - deyatel'nyy chlen AN SSSR  
prof. V.V. Parin) AMN SSSR, Moskva.

FRANKSHTEYN, S.I., prof.; BIYASHEVA, Z.G.; SMOLIN, L.N.

Significance of inhibitory synapses in the mechanism of  
compensation of functional disorders. Biul.eksp.biol. i  
med. 59 no.5:27-31 '65. (MIRA 18:11)

I. laboratoriya eksperimental'noy patologii nervnoy sistemy  
(zav. - prof. S.I.Frankshteyn) Instituta normal'noy i  
patologicheskoy fiziologii (direktor - deystvitei'nyy chlen  
AMN SSSR prof. V.V.Parin) AMN SSSR, Moskva. Submitted May  
16, 1964.

FRANKSHTEYN, S.I. (Moskva)

Organizing a course of pathological physiology. Pat. fiziol.  
i eksp. terap. 8 no.5:89-90 S-0 '64.  
(MIRA 18:12)

SERGEYEVA, Z.N.; FRANKSHTEYN, S.I., prof.

Tonic effect of pulmonary receptors on the respiratory center and the mechanisms of dyspnea in lesions of the lungs. Biul. eksp. biol. i med. 60 no.11:25-27 N '65.

(MIRA 19:1)

1. Laboratoriya eksperimental'noy patologii nervnoy sistemy (zav. - prof. S.I. Frankshteyn) Instituta normal'noy i patologicheskoy fiziologii (direktor - deystvitel'nyy chlen AMN SSSR V.V. Parin), Moskva. Submitted March 12, 1965.

FRANK-KAMENETSKIY, Viktor Alibartovich; n. VORGINA, N.I., red.

[Nature of structural impurities and inclusions in  
minerals] Priroda strukturnykh primesei i vkluchenii v  
mineralakh. Leningrad, Izd-vo Leningr. univ., 1964. 238 p.  
(MIRA 17:9)

VINOKURENKOVA, A. I. Docent; FRANNENBERG, I. G.

Infants (Newborn)

Control of initial loss of weight in the new-born by hemoclyster with retroplacental blood. Akush. i gin., No. 3, 1952.

Monthly List of Russian Accessions. Library of Congress, October 1952. UNCLASSIFIED.

Cytology

CZECHOSLOVAKIA

FRANO, J.; Affiliation not given.

"Principles of General Cytology by D. Soudek."

Bratislava, Biologia, Vol 21, No 8, 1966, pp 634 - 635

**Abstract:** The author discusses the book which was published by the Statni Zdravotnické Nakladatelstvi at Prague in 1965; it has 488 pages and 178 figures. Physical methods of cytology, chemical composition and physical properties of living organisms, non-cellular organisms, structure of cells, metabolism of cells, evolution of cells, and heredity of cells are discussed. No references.

1/1

CZECHOSLOVAKIA/Virology - Human and Animal Viruses.  
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413610010-5" R-3

Abs Jour : Ref Zhur - Biol., No 12, 1958, 52633

Author : Vrtiak, J., Frano, J., Belobrad, G.

Inst :

Title : Isolation of Newcastle Disease Virus in Partridges and Its Properties.

Orig Pub : Veterin. casop., 1957, 6, No 5, 353-362

Abstract : No abstract.

Card 1/1

FRANO, V.

"Problems concerning mobile workshops precasting building elements."

p. 182 (Stavba) Vol. 4, no. 6, June 1957.  
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

FRANOUSKI, B.

17. *Chrysanthemum*

11

FRANOVIC, Anton, dr.

New profile of Cateske Toplice. Reumatizam 13 no.1:16-24 '66.

1. Medicinska sluzba Ljecilista Cateske Toplice.

DISHLOECK, H. A. E., M.D.; FRANSEN, M. G. C., M.D.

Allergy and bacteriology in chronic purulent maxillary sinusitis. Cesk. otolar. 5 no.1:1-4 Feb 56.

1. From the Otological Dept. of Boerhaave Hospital, University of Leyden, Holland, director prof. Dr. H. A. E. van Dishoeck.

(SINUSITIS,

maxillary, purulent, chronic bilateral sinusitis, comparison of allergic and non-allergic types.

(ALLERGY, manifest.

sinusitis, purulent, chronic, bilateral, comparison of allergic and non-allergic types.

L 13250-65 EWP(e)/EWT(m)/EWP(t)/EWP(k)/EWT(b) PF-4 ASD(m,-3) ASD(rs) JD/JG

ACCESSION NR: 4T4046753

Z/0000/64/000/000/0019/0026

AUTHOR: Frantsevich, I. N. (Frantsevich, I. N.); Silyanovskaja, I. S. (Silyanovskaya, I. S.)

TITLE: Study of the nature of lattice defects in rhenium in relation with various types of deformation and the study of relaxation and recrystallization

SOURCE: Medzinárodná konferencia o praskovej metalurgii. 1st, 1962. Problemy praskovej metalurgie; sborník vedeckych prac (Problems in powder metallurgy; collection of scientific papers). Bratislava, Vyd-vo SAV, 1964, 19-26

TOPIC THIS: rhenium, work hardening, relaxation, recrystallization texture, x ray, lattice distortion

ABSTRACT: Work-hardening, relaxation and recrystallization processes as well as the texture of rhenium deformed by monaxial compression or by multifold compression in steel bands were examined by x-ray diffraction method. In the first case recrystallization of rhenium took place at 1200°C and in the second case at 1000°C. This diversity was assumed to arise from the difference in latent energies of deformation, localized in the region of coherent distortions and perhaps in orientation effect.

1/2

1750-65  
ACCESSION NR: A14046753

ASSOCIATION: Institut metalloberazivki i special'nykh splavov, AS UkrSSR, Kiev  
(Institute of Powder Metallurgy and Special Alloys, AN UkrSSR)

DISPENSED: 00 ENCL: 00 SUB CODE: MN  
DISP. S/N: 004 OTHER: 001

VARVAK, P.M.; KIRIYENKO, V.I.; CHUDNOVSKIY, V.G.; KRYLOV, V.K.; BRAUDE,  
Z.I.; FKIMYAN, V.A.; IVANOV-DYATLOV, A.I.; FRANOV, P.I.; ASHANOV,  
A.Ye.; BERDICHEVSKIY, N.M.; IZAKSON, S.I.; FOGLOV, V.I.; KOLESWI,  
K.S.; KUYDICH, S.A.; SVERDLOV, A.I.; SIMON, Yu.A.; SHENGFAYN, S.R.;  
BOLOTIN, V.V.; GOL'DENELAT, I.I.

Book reviews and Bibliography. Stroi. mekh. i rasch. scorr. 3  
no.6:46-50 '61. (MIRA 15:4)  
(Bibliography--Structures, Theory of)

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000413610010-5

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000413610010-5"

FRANSUA, A.

TECHNOLOGY

Periodicals: ELECTROTEHNICA. Vol. 6, no. 7, July 1958

FRANSUA, A. Comparison of the performances of the regular small electric motors with commutator, and those of the small electric motors without stator winding. p. 239

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2,  
February 1959, Unclass.

Fransua, A.

TECHNOLOGY

Periodical STUDII SI CERCETARI DE ENERGETICA Vol. 8, No. 3, 1953

Fransua, A. ; Motors without excitation winding on the stator; some criteria for their projecting by method of analogy. p. 135.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 3  
May 1959, Unclass.

March

FRANSUA, Al.

Universal commutator without stator winding. Rev electrotechn  
energet 4 no.2:295-304 '59. (EEAI 10:1)  
(Electric motors) (Commutators)

FRANSUA, A.

Considerations on the action of a two-phase asynchronous motor with a goblet-shaped rotor. p. 161.

ELECTROTEHNICA. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din Romania si Ministerul Energiei Electrice si Industriei Electrotehnice)  
Bucuresti, Romania, Vol. 7, no. 5, May 1959

Monthly list of East European Accessions (EE&I) LC, Vol. 8, no. 8, Aug. 1959

Uncl.

Fransua, A.

Theory of the two-phase bucket servo-motor. Tr. from the Rumanian. p.184

MERES ES AUTOMATIKA. (Mérstechnikai és Automatizálási Tudományos Egyesület)  
Budapest, Hungary. Vol.7, no.7, 1959

Monthly List of East European Accessions (EEAI) LC, Vol.8, no.11  
November 1959  
Uncl.

FRANSUA, A.

Calculation of the electromotive force created by the transversal field of reaction in the armature of the universal commutator motor. p. 325

STUDII SI CERCETARI DE ENERGETICA  
Bucuresti, Rumania  
Vol. 9, no. 2, 1959

Monthly list of European Accession Index (EEAI) LC Vol. 8, No. 11  
November 1959  
Uncl.

FRANSUA, A.

Theoretical considerations on the two-phase asynchronous motor with  
the hollow rotor. Rev electrotechn energet 5 no.1:57-71 '60.

(EEAI 10:4)

1. Comite de redaction, Revue d'electrotechnique et d'energetique.  
(Rotors) (Electric motors, Induction)

FRANSUA, Al.

Computation of the tension of the armature transverse field. Rev  
electrotechn energet 5 no.2:299-309 '60. (EEAI 10:5)

1. Comite de redaction, Revue d'electrotechnique et d'energetique.  
(Armatures) (Commutation (Electricity))

FRANSUA, Al.

Steering equipment of the asynchronous motors for operating the drilling machinery. Studii cerc energet 11 no.2:377-400 '61.

FRANT, STANCL

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and  
their Applications. Cellulose and Cellulose Pro-  
ducts. Paper.

K-5

Abs Jour: Ref Zhur-Khimlya, 1958, No 1, 3310.

Author : Stancl Frant

Inst :  
Title : New Controlling and Measuring Instruments for the Paper  
Industry.

Orig Pub: Papir a celulosa, 1956, 11, No 5, 105-106.

Abstract: The working principle and the operation of the first Czechoslovak controlling and measuring instruments for the paper industry developed at the "Korostav" plant are described. (lab. desintegrator with electric motor, device for determining the extent of crushing, laboratory mill, device for measuring the swelling of cellulose and other devices and instruments).

Card : 1/1

FRANTA, B.

The nature of preventive work in dermatology in factories. Cesk. derm.  
37 no.1:59-66 F '62.

1. Kozni oddeleni polikliniky OUNZ v Hodonine, vedouci MUDr. Bernard  
Franta.

(INDUSTRIAL MEDICINE) (DERMATOLOGY)

FRANTA, B.; JANOS, P.

Zoon's plasmocytic benign circumscrip chronic balanoposthitis.  
Cesk. derm. 36 no.8:541-545 D '61.

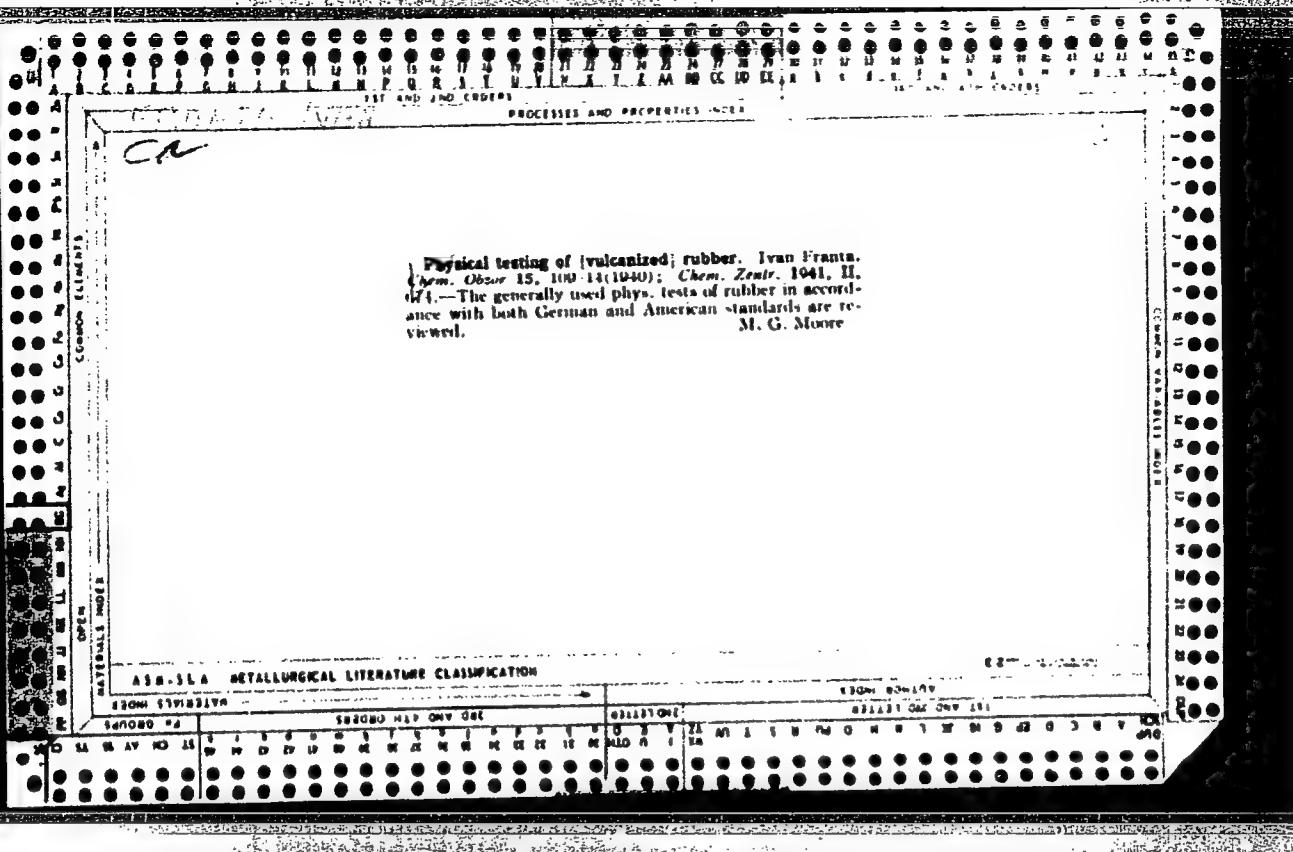
1. Kozni oddeleni polikliniky OUNZ v Hodonine, vedouci MUDr.  
B. Franta Kozni oddeleni nemocnice OUNZ v Uh. Hradisti, prednosta MUDr.  
Fr. Valina.

(ERYTHROPLASIA diagnosis) (PENIS diseases)

FRANTA, B.

Occupational stigmata in brickmakers loading brick-coping  
in the brick kilns of Hodonin. Česk. derm. 40 no.5:345-348  
O '65.

1. Kozni oddeleni polikliniky Obvodniho ustavu narodniho  
zdravi v Hodonine (vedouci MUDr. B. Franta).



6  
8  
2 May  
V 4316. Polyvinyl Chloride. J. FRANTZ and F. GRUNDER. Plaste u. Kaut., 1954, No. 264. State C Publishing Office for Technical Literature, Prague, H, 1953, pp. 404. Price 171 Kčs. This is a collective work with twenty-three contributors, including E. Blabolil, E. Sigl, and K. Vesely, covering development, production, auxiliary materials, copolymerization, testing, fabrication of Novodur and Novoplast, application, and testing of finished products. A selection of Czech, Russian, and German standards is given.

352H21

1  
M. J. G.

CZECHOSLOVAKIA/Chemical Technology. Chemical Products H  
and Their Uses. Part IV. Synthetic  
Polymers. Plastics.

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 52028

Author : Franta, Ivan

Inst :

Title : Alkathene - a British Polyethylene.

Orig Pub : Chem. prumysl, 1957, 7, No 5, 279-280

Abstract : ICI plants produce about 90,000 tons of polyethylene (alkathene) (I) per year. Several grades of high pressure alkathenes are available. Grade 2 (high molecular weight, good physical and chemical properties, good crack resistance upon contact with polar liquids), was primarily recommended for the manufacturing of hoses and

Card : 1/4

CZECHOSLOVAKIA/Chemical Technology. Chemical Products H  
and Their Uses. Part IV. Synthetic  
Polymers. Plastics.

Abs Jour : Ref Zhur-Khimiya, No 15, 1953, 52028

for electrical cable insulations. Grade 7 was recommended for making films and containers. Grade 20 was suitable for general uses. Grade 40, the newest type of I, was earmarked for a continuous extrusion processing, while grade 53 could be cast under pressure, greatly reducing the processing time (the finished goods from grade 53 were subjected to high temperatures). An antioxidant is usually added to I, which is being processed into industrial goods. The antioxidant (2 percent of carbon black) insures good aging of the

Card : 2/4

120

CZECHOSLOVAKIA/Chemical Technology. Chemical Products H  
and Their Uses. Part IV. Synthetic  
Polymers. Plastics.

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 52028

polyethylene (up to 40 years). I-tubes (hoses) were either directly blown out from films or were manufactured by continuous stamping. Hose diameter sizes of 6.35-50.8 mm on 30-150 m long rolls were made by the above method. Large diameter tubes, such as 304.8 mm, for instance, were formed from separate cuts. Tubes for chemical industry (approximately 1 m) were manufactured exclusively by centrifugal casting. Low pressure-I was not manufactured on an industrial scale until now. It was noted that experimental work and tests were conducted by a newly

Card : 3/4

CZECHOSLOVAKIA/Chemical Technology. Chemical Products H  
APPROVED FOR RELEASE: 06/13/2000 and Their Uses. Part IV. Synthetic  
Polymers. Plastics.

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 52028

formed Plastic Institute, which employs 1,600 persons, of whom 260 are exclusively concerned with problems of processing. --  
L. Pesin

Card : 4/4

Country	: CZECHOSLOVAKIA.
Category	: Chemical Technology. Chemical Products and Their Applications. Synthetic Polymers.
Abs. Jour	: Ref. Zhur. - Khim., No. 10, Plastika, 1959, 36936.
Author	: Zelinger J., <u>František Ivanov</u> .
Institut.	: Not given.
Title	: The Aging of Polyvinylchloride Pastes.
Orig. Rub.	: Chem., prumysl, 1958, 8, No. 7, 377-381.
Abstract	: The viscosity of pastes, prepared from various mixes of polyvinyl chloride and plasticizers (diethylphthalate, diethylphthalate, malathion AH, diethyladipinate, mesamoll and tricresylphosphate), was investigated. The measurements were conducted by the rotatory viscosimeter at 25 and 30°. It was established that a 15-minute stirring of the pastes with a mixer, rotating with a speed of 500 revolutions per minute, practically eliminates tyrotropic qualities. The viscosity, which is conditioned by tyrotropy, is found to be

Car: 1/3

H-155

Country :	H
Category :	
Abc. Jour. :	
Author :	
Institut. :	
Title :	
Orig. Pub. :	
Abstract :	in linear dependence on the terminal viscosity of the pastes. It was discovered that the viscosity of the pastes, containing mixtures of plasticizers, lies in the space between the viscosities of the pastes, prepared by the application of individual plasticizers. The greatest influence on terminal viscosity is shown by plasticizers, in which the resin dissolves and swells with difficulty and with a greater heat of solution (for example, di- octyladipinate). It is noted that the ro- tatory viscosimeter may be utilized for the

Card: 2/3

FRANTHA, I.

15  
✓ Solvating activity of plasticizers in poly(vinyl chloride) pastes. J. Štěpák, I. Franta, and K. Ohlidalová (Vys. říkola chem.-technol., Prague). *Chem. průmysl* 9, 604-7 (1959).

The solvation has been investigated of a poly(vinyl chloride) powder PCU-G (I) with dibutyl phthalate (II), diethyl phthalate (III), dioctyl sebacate (IV), and tritolyl phosphate (V) at 25-154°, the concn. of II-V being 40-70%. The solvation has been followed by means of  $n$  detns. on the

suspensions, and a relation is suggested for the calcul. of the solvating activity ( $S$ ) from measurements of  $n$  of the polymer ( $n_1$ ) and of the equil. value of  $n$  of the suspension ( $n_p$ ) which is reached after about 30 hrs.:  $S = (n_p - n_1)/(n_{max.} - n_1)$ , where  $n_{max.} = n_1x_1 + n_2x_2$ , and  $x_1, x_2$  = wt. fractions of polymer and plasticizer, and  $n_2 = n$  of the plasticizer. The solvation of I increased with increasing concn. of I in the suspension, and at a given temp. reached a max. value, the latter decreasing with decreasing temp.; at temps. below 0° practically no solvation could be observed. The value of  $S$  decreases in the order II > V > IV > III.

J. Šebenda

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coff

S/081/62/000/023/102/120  
B101/B186

AUTHORS: Štěpek, Jiří, Franta, Ivan

TITLE: Method of stabilizing vinyl polymers and copolymers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 713, abstract  
23P324 (Pat. CzSSR 99836, June 15, 1961)

TEXT: The polymer particles are treated with an aqueous solution of the stabilizer (after precipitation and separation of the latex, or before plasticizing). High efficiency is achieved using cheap stabilizers which under other conditions give poor results. At the same time, the consumption of admixtures is considerably reduced (0.01 - 0.5% by weight). 60 kg of copolymer (CP) of vinyl chloride with vinyl acetate, obtained by suspension polymerization, is washed, before drying, in a centrifuge with 100 liters of 1% aqueous solution of  $\text{NaNO}_2$ , and is centrifuged to a moisture content of 20%. After drying in vacuo, the polymer is calendered at  $140^{\circ}\text{C}$  for 40 min, and at  $160^{\circ}\text{C}$  for 2 min. The sample has a slightly yellowish color. A control sample of CP stabilized with 0.6% by weight of calcium stearate becomes already brown at  $140^{\circ}\text{C}$ . Positive results are obtained

✓

Method of stabilizing...

S/081/62/000/023/102/120

B101/B186

by treating CP with sodium hydrosulfite, formaldehyde, dicyano diamide, or caprolactam by the patented method. [Abstracter's note: Complete translation.]

Card 2/2

JANACEK, Josef; FRANTA, Ivan, prof., inz., dr.

Relation between the physical and chemical constant properties of carbon blacks and the physical value of butadiene-styrene compounds and vulcanizates, Sbor chem tech no.3, part 1:271-327 '59.

1. Katedra technologie plastickych hmot, Vysoka skola chemicko-technologicka, Praha.

FRANTA, Jaroslav

Experiences in replacing copper by aluminum in the Elektrotechnicke zavody Julia Fucika National Enterprise. El tech obzor 52 no.12:661-662 D '63.

1. Elektrotechnicke zavody Julia Fucika, n.p.

FRANTKA, L.; LANE, L.

Use of ultrasonics in the North Bohemian Brown Coal basin.

P. 298. (UHLI.) (Praha, Czechoslovakia) Vol. 7, No. 9, Sept. 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, 1958

FRANTAL, Vaclav

For fast introduction of the new transportation organization.  
Zel dop tech 12 no.5:132 '64.

ACC NR: AP7006016

SOURCE CODE: CZ/0041/66/000/005/0492/0506

AUTHOR: Kunes, Josef -- Kuncsh, I. (Engineer; Candidate of sciences);  
Ulrych, Bohus -- Ulrikh, B. (Engineer); Franta, Vaclav (Engineer)

ORG: High School of Machinery and Electrical Engineering, Pilsen (Vysoka skola  
strojni a elektrotechnicka)

TITLE: The solution of thermal shocks on paper R-C analogons [Presented by:  
Engineer and Candidate of Sciences Ludck Krejci]

SOURCE: Strojnicky casopis, no. 5, 1966, 492-506

TOPIC TAGS: thermal shock, temperature gradient, turbine blade, reactor  
pressure vessel, model, RC model

ABSTRACT: A solution is made of the problem of determining non-stationary  
temperatures and temperature gradients, which arise in parts of energetic  
machines at thermal shocks. For the solution, R-C models are used. The basic  
theory of the electrothermal analogy of unsteady fields is given and three typical  
examples of thermal shock are solved, i. e., in a plate, in a turbine blade, and in a  
reactor pressure vessel. Orig. art. has: 9 figures and 23 formulas. [Authors'  
abstract] SUB CODE: 20, 10, 18/SUBM DATE: 24Aug65/ORIG REF: 003/ [KS]  
Card 1/1 OTH REF: 007/

FRANTAS HEV, N.H.

18.3100 1087

21033  
S/590/61/000/006/019/034  
D220/D503

AUTHORS: Ivanov, A.I., Lebedev, O.A., Timofeyev, V.V.  
Vinokurov, V.B., and Frantas'yev, N.A.

TITLE: Electrolysis of  $\text{TiCl}_4$  in molten chloride salts

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiia titana, 136 - 144

TEXT: The authors studied the technological aspects of the electrolysis of  $\text{TiCl}_4$  in molten chlorides --  $\text{NaCl}$  50,  $\text{CaCl}_2$  35,  $\text{BaCl}_2$  15 % -- in a large, laboratory pilot-plant. 403 electrolyses were carried out, and the longest period of continuous operation, during which the cathode and deposits were extracted 50 times, was about 100 hr.  $\text{TiCl}_4$  was fed through a special quartz pipe into the space between the stainless-steel cathode and graphite-block anode. The following optimum conditions for electrolysis on a semi-industrial scale were first established: 1) The saturation of the electrolyte with  $\text{TiCl}_4$  for 1 hr. at a d.c. strength of about 200 amp. and at a

Card 1/3

21034

S/598/61/000/006/019/034

Electrolysis of titanium tetrachloride.. D228/D503

TiCl<sub>4</sub> outlay of 1 - 1.5 l/hr.; 2) A unit-electrolysis time of 5 amp.hr./cm<sup>2</sup> -- the cohesion between the cathode and deposit is poor at 15 - 22 amp.hr./cm<sup>2</sup>; 3) A cathode current-density of approximately 1.8 - 2.0 amp/cm<sup>2</sup>; 4) An operating temperature of 720 - 750°; 5) A TiCl<sub>4</sub> outlay of 1 l/1000 amp.hr.; and 6) The cessation of the TiCl<sub>4</sub> input for 5 min. before the end of the electrolysis -- to process the electrolyte at a nominal current-strength. These specifications were then checked by experiments in an electrolyzer with a hollow cathode and fixed cell -- when it was found that varying the current-strength has little effect on the electrolyte's Ti content for a given outlay of TiCl<sub>4</sub>; that within the limits 1.5 - 2.72 amp/cm<sup>2</sup> the cathode current-density does not influence the grade or yield of the Ti deposit, that raising the operating temperature to 800° reduces the amount of Ti precipitated at the cathode, and that varying the TiCl<sub>4</sub> input above or below 1 ml/l amp.hr. lowers the current-discharge as a result of the formation of Na or lower chlorides on the electrode surfaces. Additional tests showed that the current discharge is 60 - 70 %, and that the cathode metal contains 1.5 - 4 % of impurities: Fe -- from the cathode rod; C - from

Card 2/3

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Electrolysis of titanium tetrachloride.. D228/D303

the a.c. electrodes; Si, Mg and Al - from the lining of the bath; and O, H and N - whose concentration depends on the electrolyzer's airtightness. In conclusion, the authors mention certain problems which require further study if the current-discharge and grade of the metallic Ti are to be improved. These include the perfection of the technique of prolonged continuous electrolysis; the improvement in the design of the electrolyzer's components -- in particular the distributor for introducing the  $TiCl_4$ ; and the rectification of defects in the electrolyte -- its poor ability to dissolve  $TiCl_4$  and its tendency to abrade the brick-linings and steel parts. The content of impurities, whose transference is proportional to the time of electrolysis and to the area of the various working-surfaces, would be reduced by increasing the electrolyzer's airtightness, by removing the a.c. graphite electrodes, by cooling parts of the steel cathodes, by glazing the steel covers, and by lining the bath's inner walls with  $MgO$  slags. There are 5 figures and 2 tables. X

Card 3/3

S/081/62/000/013/026/054  
B177/B101

AUTHORS: Ivanov, A. I., Frantash'ev, N. A.

TITLE: Electrolysis of titanium tetrachloride in molten chlorides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 412, abstract 13K191 (Sb. "Titan i yego splavy". no. 6, M., AN SSSR, 1961, 153-160)

TEXT: Research conducted with a large laboratory electrolyzer showed that when  $TiCl_4$  was electrolyzed in a melt composed of (in %)  $NaCl$  50,  $CaCl_2$  35,  $BaCl_2$  15, the resulting Ti was mixed with 4-5 % of Fe, C, O, Si, Al, Mg, Cl, Na, H. The authors establish the sources of contamination of the Ti by the admixtures and indicate means of reducing them. The increased productivity of the electrolyzer in prolonged continuous electrolysis improves the quality of electrolytic Ti, increases the current yield and the utilization degree of  $TiCl_4$ . [Abstracter's note: Complete translation.]

Card 1/1

LEBEDEV, O. A.; FRANTAS'YEV, N. A.; OLYUNIN, G. V.; MUZHZHLEV,  
K. D.; SHEKA, V. P.; SHERK, T. S.

Developing a method of mechanized removal of electrolytic  
slime in magnesium production. TSvet. met. 36 no. 11:38-  
41 N '63. (MIRA 17:1)

FRANTAS'YEV, N.A.

Effect of manganese impurity on the electrolysis of magnesium chloride. Zhur. prikl. khim. 37 no.2:361-366 F '64.  
(MIRA 17:9)

LEBEDEV, Oleg Andreyevich; FRANTAS'YEV, Nikolay Anatol'yevich;  
MUZHZHLEV, Konstantin Dmitriyevich

[Casting, refining, and preparing magnesium alloys; manual  
for workers in magnesium foundries] Lit'e, rafinirovanie i  
prigotovlenie magnievykh splavov; posobie dlia rabochikh  
liteinykh tsekhov magnievykh zavodov. Moskva, Metallurgiia,  
1965. 56 p. (MIRA 18:7)

FRANTAS'YEV, Nikolay Anatol'yevich; MUZHAEVLEV, Konstantin  
Dmitriyevich; LEBEDEV, Gleg Andreyevich

[Operation of rotary kilns, chlorinators and continuous  
action, stationary carboalite furnaces] Obsluzhivanie vra-  
shchayushchikhsia pechey, khloratorov i pechey SKN. Moskva,  
Metallurgiia, 1965. 60 p. (MIRA 18:8)

SPANTAS, YEV. N.A.

Effect of a silica addition on the electrolytes of magnesium chloride and carnallite. Tsvet. met. 38 no. 7 61-62 Ja '65  
(MRA 18c2)

L 28969-66 EWT(m)/T/EWP(t)/ETI IJP(c) DS/JD	
ACC NR: AP6019135	SOURCE CODE: UR/0136/65/000/002/0064/0066
AUTHOR: <u>Frantase'yev, N. A.</u>	
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TITLE: Effect of impurities on the electrolytic process of <u>magnesium</u> chloride and carnallite	
SOURCE: Tsvetnyye metally, no. 2, 1965, 64-66	
TOPIC TAGS: magnesium compound, chloride, electrolysis, chlorination, magnesite, titanium, furnace, magnesium, electrolyte	
ABSTRACT: In 1960-61 a group of associates at the <u>All-Union Aluminum and Magnesium Institute</u> (VAMI), the Affiliate of VAMI, and magnesium plants studied the generalization of experiences in the operation of electrolysis shops. Much attention was paid to an explanation of the effect of various forms of magnesium chloride raw materials and the technological factors of <u>electrolysis</u> . Nevertheless, an analysis of the effect of numerous factors on electrolysis from production data meets huge obstacles since it is rarely possible to exclude the effect of many factors and clearly show the meaning of each of them individually. Hence, in conducting this work it was considered that a number of circumstances during analysis could affect the current yield and other indicators more strongly than the analyzed factor. Additionally, the control over impurity content in the raw materials	
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and electrolyte in the period analized (1960-61) was unorganized. Certain impurities ( $H_2O$ , Mn, F, C) as a rule were not controlled.

At one magnesium plant monthly operations on six industrial electrolyzers were conducted according to the following scheme of supply: electrolyzers with top anodes were supplied with magnesium chloride obtained by chlorination of magnesite in electric shaft furnaces ( $MgCl_2$  ShEP) and recovered  $MgCl_2$  from titanium production ( $MgCl_2$  B and D); electrolyzers with side anodes - supplied with carnallite.

The magnesium raw material was taken from all experimental electrolyzers in individual vacuum ladles and was weighed in the casting section; the slimes were removed manually. The amount of poured raw material was controlled by weighing and also by the change of electrolyte level in the bath; the spent electrolyte and fluoride salts were additionally analyzed during the carnallite operation.

Samples of  $MgCl_2$  were taken from the ladles directly before pouring the raw material into the electrolyzers along with the samples of secondary magnesium entering with the  $MgCl_2$  from the titanium production. Electrolyte samples were taken 30 minutes after changing the raw material.

In the case of charging the electrolyzers with  $MgCl_2$  B and D, the latter was poured from the second half of the ladle for maximum exclusion of possible spilling of secondary magnesium.

In all the indicated electrolyzers the technical operating conditions were strictly maintained, which are accepted for the types of electrolyzers studied and supply schemes in accordance with actual operating instructions.

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